

What is claimed is:

1. A portable device for dispensing compressed gas comprising:

a sealed pressure vessel, said pressure vessel including a threaded aperture communicating with the interior of said pressure vessel;

a flange washer having a gas aperture therethrough and wherein said flange washer is situated over said threaded aperture of said sealed pressure vessel so that said aperture of said flange washer is aligned with said threaded aperture, said flange washer further including a flange protrusion extending outward from said flange washer;

a gas regulator including a body having a threaded protrusion adapted to mate with and engaging said threaded aperture of said sealed pressure vessel, a fluid channel within said body extending from within said body through said threaded protrusion and establishing fluid communication with the interior of said sealed pressure vessel, said gas regulator further including a pressure regulator in fluid communication with said fluid channel, said pressure regulator having an output orifice at which reduced pressure gas is available, said body further including a body protrusion that mechanically engages said flange protrusion, said body protrusion situated near said threaded protrusion; and

a handle attached to said flange washer, said handle including a u-shaped portion attached to said flange washer at the free ends of said u-shaped portion, said u-shaped portion extending away from said pressure

vessel and substantially surrounding said gas regulator, said handle including a second rod portion attached to said u-shaped rod portion and situated substantially transverse to said first portion, said second portion substantially surrounding said gas regulator.

2. The device of claim 1 wherein said handle is removably attached to said flange washer.

3. The device of claim 2 including a gas flow control having a flow control input orifice and a flow control output orifice, said gas flow control attached to said gas regulator with said flow control input orifice in fluid communication with said output orifice of said pressure regulator, and wherein metered gas flow is delivered to said flow control output orifice; and

wherein said gas flow control is disposed between said u-shaped portion of said handle.

4. The device of claim 3 wherein said flange washer includes a mating protrusion extending outward toward said gas regulator and wherein said gas regulator includes a mating portion of said body formed to positively engage said mating protrusion.

5. The device of claim 4 wherein said mating protrusion includes a planar surface that engages a planar portion formed in the body of said gas regulator.

6. The device of claim 5 including a protective coating applied to a substantial portion of said handle and wherein said handle is made of metal.

7. The device of claim 1 wherein said body of said gas regulator includes a shutoff orifice in fluid communication with said fluid channel, said portable device further including a shutoff valve attached to said gas regulator body and disposed in said shutoff orifice, said shutoff valve extending into said fluid channel wherein said shutoff valve is positionable in a first operable position to enable fluid flow through said fluid channel, said shutoff valve being positionable in a second operable position to block all fluid flow from said sealed pressure vessel through said fluid channel.

8. An impact protection device for use with a portable gas delivery system, the portable gas delivery system including a pressure regulator device having a threaded protrusion and attached to a pressurized tank having a threaded aperture, said impact protection device comprising:

a flange washer situated between the tank and the pressure regulator device, said flange washer having a substantially planar

configuration and extending perpendicularly beyond the regulator device, said flange washer further including a regulator aperture therein to receive the threaded protrusion of the pressure regulator device therethrough;

a substantially u-shaped rod attached to said flange washer at the free ends of said u-shaped rod, said u-shaped rod extending away from the tank and over the pressure regulator device in a first plane; and

protection means for preventing mechanical impact with the pressure regulator device, said protection means situated in a plane substantially perpendicular to said first plane and attached to said u-shaped rod, said protection means substantially surrounding the pressure regulator device.

9. The impact protection device of claim 8 wherein said protection means is a second rod transversely attached to said u-shaped rod and substantially surrounding the pressure regulator device.

10. The impact protection device of claim 9 wherein said u-shaped rod is removably attached to said flange washer.

11. The impact protection device of claim 10 wherein said u-shaped rod and said protection means are substantially covered by a resilient coating.

12. The device of claim 11 including alignment means for rotationally aligning said flange washer with the pressure regulator device, said alignment means having a first portion situated on said flange washer and a second portion situated on the pressure regulator and wherein said first and said second portion engage one another to orient said flange washer with respect to the regulator.

13. The impact protection device of claim 12 wherein said resilient coating is a polymer based material.

14. A portable device for dispensing compressed gas comprising:

a sealed pressure vessel, said pressure vessel including a threaded aperture communicating with the interior of said pressure vessel;

a substantially flat disk having a disk aperture therethrough and wherein said disk is situated adjacent said pressure vessel with said disk aperture aligned with said threaded aperture of said sealed pressure vessel;

a gas regulator including a body having a threaded protrusion adapted to mate with and engaging said threaded aperture of said sealed pressure vessel, a fluid channel within said body extending from within said body through said threaded protrusion and establishing fluid communication with the interior of said sealed pressure vessel, said gas regulator further including a pressure regulator situated within said body

in said fluid channel, said pressure regulator having an output orifice at which reduced pressure gas is produced; and

a handle attached to said flange washer, said handle including a u-shaped portion having two free ends and attached to said flange washer at said free ends, said u-shaped portion extending away from said pressure vessel and substantially surrounding said gas regulator on three sides thereof, said handle including a second rod portion attached to said u-shaped rod portion and situated substantially transverse to said first portion, said second portion being formed to substantially surround said gas regulator.

15. The device of claim 14 further including:

alignment means for rotationally aligning said gas regulator with said disk, said alignment means having a first portion situated on said disk and a second portion situated on said gas regulator body.

16. The device of claim 15 wherein said handle is removably attached to said disk.

17. The device of claim 16 wherein said handle includes a resilient coating applied to a substantial portion of the exterior surfaces of said handle.

18. The device of claim 17 wherein said body of said gas regulator further includes a shutoff orifice in fluid communication with said fluid channel, said portable device further including a shutoff valve attached to said gas regulator body and disposed in said shutoff orifice, said shutoff valve extending into said fluid channel and wherein said shutoff valve is positionable in a first operable position to enable fluid flow through said fluid channel, said shutoff valve being positionable in a second operable position to block all fluid flow from said sealed pressure vessel through said fluid channel.